

Listing of Claims

1. (previously presented) A computer mouse, comprising a housing and a rotary dial positioned relative to an external surface of the housing, the housing providing a platform for sliding the mouse along a surface in order to move a cursor or pointer on a display screen of a computer system, the rotary dial rotating around an axis in order to implement a control function in the computer system, the rotary dial rotating within a plane that is substantially parallel to the external surface of the housing, the rotary dial having an engageable face for allowing a user to facilitate rotation of the rotary dial, the engageable face being completely exposed to the user.
2. (previously presented) The computer mouse as recited in claim 1 wherein the control function is associated with performing an action on a display screen.
3. (previously presented) The computer mouse as recited in claim 2 wherein the control function corresponds to a scrolling feature.
4. (previously presented) The computer mouse as recited in claim 1 wherein the control function is used to control various applications associated with a computer system.
5. Cancelled
6. Cancelled
7. Cancelled
8. (previously presented) The computer mouse as recited in claim 7 wherein the engageable face is substantially parallel to the external surface of the housing.
9. Cancelled
10. Cancelled
11. (previously presented) The computer mouse as recited in claim 1 wherein the rotary dial is tangentially accessible to a user from the entire circumference of the rotary dial.

12. (original) A mouse for moving a cursor or pointer on a display screen, comprising:
a mouse housing; and
a disk coupled to the mouse housing and rotatable about an axis, the disk being configured to facilitate a control function on the display screen, the disk having a touchable surface for rotating the disk about the axis, the touchable surface being completely accessible to a finger of the user such that the disk can be continuously rotated by a simple swirling motion of the finger.
13. (original) The mouse as recited in claim 12 wherein the control function is associated with performing an action on the display screen.
14. (original) The mouse as recited in claim 13 wherein the control function corresponds to a scrolling feature.
15. (original) The mouse as recited in claim 14 wherein the scrolling feature allows a user to move displayed data across a viewing area on the display screen so that a new set of displayed data is brought into view in the viewing area.
16. (previously presented) The mouse as recited in claim 15 wherein the rotation of the disk causes the displayed data to move across the viewing area of the display screen.
17. (original) The mouse as recited in claim 16 wherein the displayed data is moved vertically or horizontally on the display screen.
18. (original) The mouse as recited in claim 17 wherein side to side manipulation of the disk corresponds to horizontal scrolling, and wherein forwards and backwards manipulation of the disk corresponds to vertical scrolling.
19. (Currently Amended) The computer mouse as recited in claim 12 wherein the mouse housing serves as a button of the computer mouse, the mouse housing provid[es]ing a clicking action for performing an action on a display screen.
20. (previously presented) A computer mouse, comprising:

a mouse housing that provides a structure for moving the computer mouse along a surface and for gripping the mouse for movement thereof;

a position detection mechanism operatively supported by the mouse housing, the position detection mechanism being configured for tracking the position of the mouse as its moved along the surface;

a disk positioned relative to an external surface of the mouse housing, the disk being rotatably coupled to the mouse housing about an axis that is normal to the external surface of the mouse housing, the disk having a user input receiving surface for facilitating movements thereof about the axis, and

an encoder for monitoring the rotation of the disk about the axis.

21. (previously presented) The computer mouse as recited in claim 20 wherein a substantial portion of the user input receiving surface is exposed outside of the mouse housing.

22. (previously presented) The computer mouse as recited in claim 20 wherein the user input receiving surface is completely accessible to a finger of the user.

23. (previously presented) The computer mouse as recited in claim 20 wherein the disk is configured to facilitate a control function.

24. (original) The computer mouse as recited in claim 22 wherein the control function corresponds to a scrolling feature.

25. (previously presented) The computer mouse as recited in claim 20 wherein the external surface corresponds to a top of the mouse housing.

26. (previously presented) The computer mouse as recited in claim 20 wherein the external surface corresponds to a side of the mouse housing.

27. (previously presented) The computer mouse as recited in claim 20 wherein the user input receiving surface of the disk is substantially flush with a top external surface of the mouse housing.

28. (previously presented) The computer mouse as recited in claim 20 wherein the plane of rotation of the disk is parallel to a top external surface of the mouse housing.

29. (Currently Amended) The computer mouse as recited in claim 20 wherein the user input receiving surface is substantially perpendicular to the axis and wherein the disk includes tactile elements for increasing the feel of the disk, the tactile elements including bumps extending from the user input receiving surface or voids representing removed sections of the user input receiving surface.

30. Cancelled.

31. (Currently Amended) The computer mouse as recited in claim 20 wherein the encoder is ~~a mechanical encoder or~~ an optical encoder.

32. (Currently Amended) The computer mouse as recited in claim 20 wherein the mouse housing serves as a button, the mouse housing provid[es]ing a clicking action for performing an action on a display screen.

33. (previously presented) The computer mouse as recited in claim 32 wherein the clicking action is actuated in a direction normal to the mouse housing.

34. (Currently Amended) The computer mouse as recited in claim 33 wherein the mouse housing includes a base coupled to a body, the base being configured to make moving contact with the surface when the computer mouse is moved by the user, the body being configured to pivot relative to the base in order to generate the clicking action, the plane of rotation of the disk being substantially orthogonal to the direction of the clicking action.

35. (previously presented) The computer mouse as recited in claim 34 wherein the axis is obliquely positioned relative to the base.

36. Cancelled

37. (original) The computer mouse as recited in claim 20 further including a button for allowing a user to make a selection on the display.

38. (previously presented) The computer mouse as recited in claim 1 wherein the engageable face of the rotary dial is substantially flush with the external surface of the housing.

39. Cancelled.

40. Cancelled.

41. (previously presented) The computer mouse as recited in claim 20 wherein the disk is configured to sit in the mouse housing.

42. (Currently Amended) The computer mouse as recited in claim 20 wherein the top surface of the disk is recessed below, level with ~~or extend above~~ the external surface of the mouse housing

43. (previously presented) The computer mouse as recited in claim 31 wherein the disk is attached to a shaft that rotates within a shaft housing attached to the mouse housing and wherein the optical encoder includes a light source, a light sensor and an optical encoding disc having a plurality of slots separated by openings therebetween, the slots and openings breaking the beam of light coming from the light source so as to produce pulses of light that are picked up by the light sensor, the optical encoding disc being an integral part of the disk or a separate portion that is attached to the shaft.

44. (New) The mouse as recited in claim 1 wherein the housing of the mouse includes a base and a button body that cooperate to contain the electronics of the mouse, the rotary dial being rotatably coupled to the button body, the button body moving relative to the base in order to generate a clicking action for selecting and executing actions on a graphical user interface, the rotary dial moving with the button body when it is moved relative to the base.

45. (New) The mouse as recited in claim 44 wherein a back portion of the button body has an external contour that substantially conforms to the contour of the palm side surface of the hand, wherein a front portion of the button body has an external contour that substantially conforms to the contour of the fingers of the hand when the palm side surface of the hand is placed on the back portion of the button body, and wherein the rotary dial is located at the front

portion of the button body so that the fingers of the hand can easily manipulate the rotary dial when the palm side surface of the hand is placed on the back portion of the button body and the fingers of the hand are placed on the front portion of the button body.

46. (New) The mouse as recited in claim 44 wherein the button body is pivotally coupled to the base.

47. (New) The mouse as recited in claim 46 wherein the button body is pivotally coupled to the base via a pivot located towards the rear of the mouse, the pivot allowing the button body to swing between an unclicked position, placing the body away from the base, and a clicked position placing the body towards the base.

48. (New) The mouse as recited in claim 47 wherein the button body engages a switch located inside the housing and opposite the pivot when the button body is moved to the clicked position, the switch generating a command signal when the button body engages the switch.

49. (New) The mouse as recited in claim 47 wherein the pivot includes a pivot support attached to the base, and a pivot pin attached to the button body, the pivot pin mating with an opening in the pivot support in order to pivotally couple the button body to the base.

50. (New) The mouse as recited in claim 47 further including a spring mechanism for biasing the button body in the unclicked position.

51. (New) The mouse as recited in claim 47 wherein the button body includes an inner shell and an outer shell, the inner shell being disposed between the base and the outer shell, the outer shell forming the exterior surface of the mouse, the inner shell covering electronic components disposed inside the mouse, the pivot including a pivot support attached to the base and an internal pivot pin attached to the inner shell, the pivot pin mating with an opening in the pivot support in order to pivotally couple the button body to the base.

52. (New) The mouse as recited in claim 51 wherein the rotary dial is positioned within an opening in the outer shell and rotatably coupled to the inner shell, the rotary dial having a shaft that rotates within a shaft housing attached to the inner shell.

53. (New) The mouse as recited in claim 1 wherein the housing has no mechanical buttons disposed thereon.
54. (New) The computer mouse as recited in claim 20 wherein the encoder includes a plurality of detents that provide tactile feedback that informs the user when the disk has reached a certain position.
55. (New) The computer mouse as recited in claim 20 wherein the mouse housing includes a front portion and a back portion, wherein the disk is seated in the front portion of the mouse housing, and wherein the front portion of the mouse housing has no mechanical buttons.
56. (New) The computer mouse as recited in claim 20 wherein the encoder is a mechanical encoder.
57. (New) The computer mouse as recited in claim 20 wherein the top surface of the disk is recessed below the external surface of the mouse housing.
58. (New) The computer mouse as recited in claim 20 wherein the top surface of the disk is extends above the external surface of the mouse housing.
59. (New) The computer mouse as recited in claim 19 wherein the mouse housing has no separate mechanical buttons disposed thereon.
60. (New) The computer mouse as recited in claim 32 wherein the mouse housing has no separate mechanical buttons disposed thereon.